RC
960
R57
v.10
no.6
cop.2

Biological
& Medical
Serials

VOL. X. NO. 6.

STORAGE

APRIL, 1917.

TRANSACTIONS

OF THE

SOCIETY OF TROPICAL MEDICINE AND HYGIENE.

ROYAL

LIBRARY
1976
NOV
1
UNIVERSITY OF TORONTO

London:
SOCIETY OF TROPICAL MEDICINE AND HYGIENE,
11, CHANDOS STREET, CAVENDISH SQUARE, W.

PRICE THREE SHILLINGS AND SIXPENCE NET.

(For Publishing Notices see page iii. of cover.)

HOWARDS'

ASPIRIN

IN 5-GRAIN TABLETS

is guaranteed to be ACID ACETYLSALICYLIC P.B.

and being manufactured exclusively from Howards' SUPERFINE SALICYLIC ACID, is a product on which absolute reliance can be placed.

HOWARDS & SONS Ltd. (Est. 1797), Ilford & Stratford, E.

By Appointment to H.M. the King.

OFFICIALLY ADOPTED.

IZAL

"A worthy and formidable weapon for battling against the bacillus."—Sir J. CRICHTON-BROWNE, F.R.S.

The Ideal Disinfectant

Unlike the ordinary black soapy disinfectants, IZAL is unaffected by the brackish and salty waters so often met with.

Of great use in Dysentery, Cholera, Plague, and all infectious diseases.

ONE Gallon MAKES 400 Gallons EFFICIENT DISINFECTANT.

Test Samples, Scientific Reports, and Prices on application.

NEWTON, CHAMBERS & CO., LTD.

Thorncliffe, near Sheffield.

TRANSACTIONS OF THE SOCIETY OF TROPICAL MEDICINE AND HYGIENE.

APRIL, 1917. VOLUME X. NO. 6.

CONTENTS.

PAGE

Notes on the prevalence of Intestinal Parasites in East Africa. By J. O. SHIRCORE, M.B., M.R.C.P. (Edin.) 101

A Case of Ulcerating Granuloma Refractory to Intravenous Injections of Antimony, X-rays, and Other Forms of Treatment. By GEORGE C. LOW, M.A., M.D., C.M., and H. B. NEWHAM, M.D., M.R.C.P. 109

Correspondence 114

SPECIAL NOTICES.

1. The next Meeting of the Society will be held on Friday, the 15th June, at 5.30 p.m.

Tea will be provided for Fellows between 5 p.m. and 5.30 p.m.

2. The Secretaries hope to be able to issue a new Year Book this summer. They specially call the attention of Fellows to this fact, and hope that they will help in the compilation by forwarding at once any changes in their addresses.

TRADE MARK 'TABLOID' BRAND

Emetine Bismuthous Iodide

1 *grain, keratin-coated*

For treatment of Chronic Carriers of Amœbic Dysentery

CLINICAL reports announce that Emetine Bismuthous Iodide removes the cysts of *Entamœba histolytica* from the fæces of chronic carriers, *vide* B.M.J., November 4, 1916, *p.* 612 and *p.* 626; also LANCET, January 6, 1917, *p.* 17.

The original investigations were carried out with material made by Burroughs Wellcome & Co., who supply this double salt as a 'TABLOID' product.

Supplied in bottles of 36 at 10/0 per bottle

BURROUGHS WELLCOME & CO.
LONDON

xx 2115

COPYRIGHT

EDITORIAL NOTICES.

The Editor of the TRANSACTIONS will be pleased to receive short papers to be included under the heading of "Notes and Comments," or "Questions," in addition to longer papers on subjects of Tropical interest, which may be offered for presentation at meetings of the Society. He will also be glad to receive books for review.

Any communications for the Editor should be addressed to THE EDITOR of the TRANSACTIONS of the Society of Tropical Medicine and Hygiene, 11, Chandos Street, Cavendish Square, W.

TRANSACTIONS
OF THE
SOCIETY OF TROPICAL MEDICINE
AND HYGIENE.

APRIL, 1917.
VOLUME X. No. 6.

NOTES ON THE PREVALENCE OF INTESTINAL PARASITES IN EAST AFRICA.

BY
J. O. SHIRCORE, M.B., M.R.C.P. (EDIN.),
East Africa Medical Service.

During the last quarter of 1914, a short series of microscopic examinations of the fæces of natives, complaining of intestinal troubles, admitted into or attending at the Native Hospital, Mombasa, were undertaken.

Of 100 examinations, 83 per cent. were positive, 17 per cent. negative. The percentage of the different ova present was as follows :—

Ankylostoma duodenale...	46 p.c.
Ascaris lumbricoides	44 „
Trichocephalus dispar	43 „
Tænia saginata	29 „
Schistosoma mansoni	5 „
Oxyuris vermicularis	2 „
Strongyloides stercoralis	3 „

On further investigation during part of 1915 and 1916, a total of 1,500 examinations were made not only of African natives, but of Indians of the Expeditionary Forces and Washihira Arabs of the Arab Rifles.

Total No. of Observations,		1500.	Positive,	51·8	p.c.	Negative,	48·1 p.c.
,,	Indians,	728.	,,	31·7	,,	,,	68·2 ,,
,,	Arabs,	83.	,,	62·6	,,	,,	37·3 ,,
,,	African,	689.	,,	71·8	,,	,,	28·1 ,,

It is necessary to state at the outset that all the subjects examined, Indians, Arabs and Africans, were, as a whole, under conditions inseparable from active service. The percentages of infections may, with certain reservations, therefore be considered to be somewhat higher than they would be under ordinary conditions of life for each of the above races.

No special distinction was drawn in the selection of patients for examination, as was for those shewn in the first table, but cases admitted for all diseases were included.

Considering the Indians of the civilian class following occupations such as those of clerks, railway men, merchants, traders and shop-keepers, it may be said that they rarely suffer from intestinal parasites.

What the figures for these may be it is impossible to say, but one cannot recollect having seen more than three cases during a period extending over two years at Mombasa.

The factors governing this are cleanly habits, thorough cooking of food, protection of the feet by boots, latrines, and a sanitary use of them.

The comparatively high degree of infections among the Indian troops is, without doubt, due to the converse of these conditions holding in the field, and although the different infections were more or less evenly distributed for most areas and seasons of the year, the sick sent in from one area in particular during the latter half of 1915, infected with ankylostomiasis, contributed materially towards raising the total percentage.

The Arab and African, for the class of native admitted, fighting men, followers and carriers, cannot be regarded as abnormally high when compared with work done elsewhere on institutional and village infection under similar sanitary or climatic conditions, or both. African troops, police and domestic servants, suffer far less from helminthic invasion than the villager, whose infection is due to promiscuous defæcation in any patch of scrub he finds convenient. This habit is universal, and probably more than any other factor, accounts for the wide-spread distribution of ankylostomiasis. It is not in any way unlikely that in this manner the fæces of one or two infected individuals may, in a very short time, be the cause of the infection of the inhabitants of a whole village or series of villages.

Some points with reference to the ages of those suffering from ankylostomiasis may be of interest. Children and young adults, unless heavily infected or suffering from some intercurrent disease, do not apply for treatment as frequently as one might suppose. Of this type those who do so do not, as a rule, refer their symptoms to any particular system, but give vague histories of not feeling well or of vertigo, and in the case of police askari usually approach one with the idea of obtaining a change or transfer to stations in their own native districts, the reasons advanced being that the local food, water, salt breezes, or want of them, dependent on the area in which they are at the time of serving, have in some abstruse manner seriously affected their health.

These also frequently develop mental symptoms taking the form of home sickness, melancholia and delusional insanity. In all such instances the fæces should always be examined.

The adult coast native possesses, as a rule, a full knowledge of the disease, and when applying for treatment states that he is suffering from ankylostomiasis, or "safura" as he calls it, and the clinical picture is usually characteristic.

Ankylostomiasis is not uncommonly a terminal infection in the aged.

The first table immediately below gives details of the different causal parasites observed. The other two tables shew the percentages by classes, combined and individual, for the five chief infections:—

	TOTAL.	INDIAN.	AFRICAN.	ARAB.
Total	1500	728	689	63
Positive	778	231	495	52
Negative	722	497	194	31
Ankylostoma duodenale ...	347	110	208	29
Ascaris lumbricoides ...	270	63	195	12
Trichocephalus dispar ...	313	49	235	29
Tænia saginata	168	41	120	7
Schistosoma mansoni ...	29	1	24	4
Oxyuris vermicularis ...	2	1	—	1
Hymenolepis diminuta ...	1	—	—	1
Schistosoma hæmatobium	3	—	2	1
Strongylus subtilis ...	4	3	1	—
Hymenolepis nana ...	2	1	*1	—
Strongyloides stercoralis...	2	—	2	—
Double Infections ...	197	34	146	17
Triple ,, ...	63	3	54	6
Quad. ,, ...	10	—	9	1
Quint. ,, ...	1	—	1	—

* This infection occurred in one of the 19 Cape boys mentioned below.

INDIAN, ARAB AND AFRICAN COMBINED.

Ankylostoma duodenale (Positive)	23·1 p.c.
Ascaris lumbricoides ,, ...	18·0 ,,
Trichocephalus dispar ,, ...	20·8 ,,
Tænia saginata ,, ...	11·2 ,,
Schistosoma mansoni ,, ...	1·9 ,,
Double Infections	13·1 ,,
Triple ,, ...	4·2 ,,
Quad. ,, ...	0·6 ,,
Quint. ,, ...	0·06 ,,

	728 INDIAN.	83 ARAB.	689 AFRICAN.
Ankylostoma duodenale	15·1 p.c.	34·9 p.c.	30·1 p.c.
Ascaris lumbricoides	8·6 „	14·4 „	28·3 „
Trichocephalus dispar	6·7 „	34·9 „	34·1 „
Tænia saginata	5·6 „	8·4 „	17·4 „
Schistosoma mansoni	0·6 „	4·8 „	3·4 „
Double Infections	4·6 „	20·4 „	21·1 „
Triple „	0·4 „	7·2 „	7·8 „
Quad. „	— „	1·2 „	1·3 „
Quint. „	— „	— „	0·1 „

African natives of the following tribes or sub-tribes were examined :—

Wa-Bugu	Wa-Kamba	Wa-Nyika
Wa-Bukedi	Wa-Konde	Wa-Nandi
Wa-Bajun	Wa-Kavirondo	Wa-Zegua
Wa-Barawa	Wa-Kikuyu	Wa-Ziba
Wa-Chaga	Wa-Kisii	Wa-Nyoro
Wa-Dama	Wa-Lendu	Wa-Nyamwezi
Wa-Digo	Wa-Lumbwa	Wa-Nyoma
Wa-Dongoroko	Wa-Yae	Wa-Pokomo
Wa-Embu	Wa-Makua	Wa-Pemba
Wa-Ganda	Wa-Masamba	Wa-Pabai
Wa-Giriama	Wa-Murua	Wa-Sawa
Wa-Swahili	Wa-Meru	Wa-Sagara
Wa-Gazija	Wa-Nubi	Wa-Segeju
Wa-Kakameka	Wa-Nauruma	Wa-Sebei
Wa-Kokea	Wa-Nyassa	Wa-Somali
Wa-Kala		

19 Cape boys are included in the whole total for Africans.

The following table shews percentages of infections among those tribes of which numbers over twenty-five were examined :—

TABLE SHEWING PERCENTAGES OF INFECTIONS AMONG THOSE TRIBES OF WHICH NUMBERS OVER 25 WERE EXAMINED.

The Nubi are here included to shew the high degree of Bilharzial infection among them.

	Wa-Ganda.	Wa-Kavirondo.	Wa-Kamba.	Wa-Kikuyu.	Wa-Kisii.	Wa-Nubi.	Wa. Nyamwezi.	Wa-Somali.	Wa-Swahili.	Total other East Africans.
No. of individuals examined ...	25	166	44	91	61	13	39	21	107	103
Infections—										
A. duodenale ...	24·0	18·0	29·5	36·2	29·5	15·3	48·7	23·8	44·8	32·0
A. lumbricoides	12·0	39·1	22·7	39·5	29·5	15·3	23·0	23·8	18·6	26·2
T. dispar ...	28·0	33·1	23·0	30·7	27·7	33·0	41·0	33·3	47·6	33·0
T. saginata ...	16·0	25·9	18·1	24·1	22·9	7·6	12·8	14·2	8·4	9·1
Schis. mansoni	12·0	3·0	6·8	—	—	30·7	2·5	—	1·8	5·8
Double infection..	24·0	19·8	20·4	18·6	22·9	15·3	28·2	28·5	25·2	20·3
Triple ,,	4·0	8·4	6·8	12·0	13·1	—	12·8	4·3	8·4	7·7
Quad. ,,	—	2·4	—	4·3	—	—	2·5	—	—	—
Quint. ,,	—	—	—	—	—	—	—	—	—	—

It is not, of course, suggested that figures deduced from examinations, varying between 25 to 150 members of any one tribe, examined at a distance from their homes, can be taken as an index of the general and tribal distribution of helminthiasis in East Africa. Nevertheless, curiously enough, in nearly every instance in which the distribution of a disease was previously known, an examination of the last table shews that the natives from those areas return a proportionately high rate of infection to a remarkable degree. For example, bilharzia is well known on the Upper Nile, and a reference to the table immediately shews true by recording a high percentage figure for the tribes therefrom, the Niletic Nubi giving a return of no less than 30·7 per cent.

It has also been recognised for some time past that the natives settled in the Nyika country, along the course of the Kibwezi and Sabaki rivers, are infected with the same disease, and this is borne out by the 6·8 per cent. for *S. mansoni* for the Wa-Kamba.

The Wa-Giriama—the following figures not included in this paper—are also infected, probably very heavily, for of 18 porters sent for physical examination, who appeared to be in good health, a history of previous hæmaturia was obtained from 9, and of 4 of these, who also stated that they could pass blood at the time, and which was done, the terminal-spined ova of *S. hæmatobium* were demonstrated in all.

On the other hand, the high figures for the tapeworm infections, almost all *T. saginata*, are due, I believe, to the personal habits of the natives of certain tribes, *i.e.*, the Wa-Kavirondo, Kikuyu and Kisii, who do not cook their meat sufficiently but eat it practically raw, and their results are therefore correspondingly raised.

Variations in the distribution of the various infections are thus not only dependent upon geographical, climatic, and seasonal conditions, but likewise on the tribal and individual habits of the native.

Parasitic human helminthiasis occupies an important position in its bearing on the question of native labour, more especially with reference to its relationship to the inefficiency and mortality which occurs whenever such labour is concentrated on works, whatever they happen to be.

From the administrative outlook the problem for the present must apparently confine itself to the practical sanitation of townships, stations

and areas, necessarily circumscribed and selected, on which native labourers are employed in large numbers.

Expenditure incurred for such special and temporary reasons, and directed towards the attainment of immediate results, is not only justifiable but economic.

No ultimate and permanent results could be anticipated with reasonable expectation of success were the same principle to be applied to large areas, except at an entirely prohibitive cost, unless there were at the same time a decided advancement in the standard of education and civilisation of the native.

A CASE OF ULCERATING GRANULOMA REFRACTORY TO INTRAVENOUS INJECTIONS OF ANTIMONY, X-RAYS, AND OTHER FORMS OF TREATMENT.

BY

GEORGE C. LOW, M.A., M.D., C.M.,

Assistant Physician and Lecturer, London School of Tropical Medicine;

AND

H. B. NEWHAM, M.D., M.R.C.P.,

Director, London School of Tropical Medicine.

[FROM THE LONDON SCHOOL OF TROPICAL MEDICINE.]

In the *British Medical Journal*, September 16th, 1916, we published the report of a case of ulcerating granuloma successfully treated by intravenous injections of antimony. In that paper an account of the disease is given, as is also the work of the South Americans on the treatment of the condition by injections of antimony. It is not therefore necessary to enter into these details again here.

Though many successes are recorded, there is not much mention of failures, except in Dr. H. C. DE SOUZA ARAUJO'S thesis on the subject, a review of which appeared in the *British Medical Journal*, July 29th, 1916. Here three relapses are noted, and it is also stated that two old and grave cases died.

Having had the opportunity of treating another case recently, and this time unsuccessfully, we think it is important to report it, as failures in treatment are so often passed over without anything being said about them.

The history of the cases is as follows:—

H., aged 34, male; white man. Once abroad only, having done one tour in Africa, on the Congo. Arrived there 1913. Stayed 31 months, then home.

Previous illnesses.—Malaria severely, cerebral type, no dysentery, no history of syphilis. On the whole enjoyed quite good health.

Present illness.—Five months before leaving Africa had a soft sore on the penis, this appearing eight days after exposure to infection. After this, the glands in the right groin began to swell, but as his right toe was also badly ulcerated at the same time, as the results of jiggers, it was supposed the bubo was due to this. A doctor opened the swelling. Later, the wound instead of healing, broke down, became ulcerative in character, and the ulceration gradually began to spread to the adjacent parts, other foci also starting. Six days after the sore on the penis appeared, he was given a dose of "606," and three weeks after the ulceration began injections of (?) mercury, the doctor evidently concluding the lesion was venereal. No better after these, however. Instead, as just mentioned, the ulceration gradually began to extend and to spread along the groin. After lasting four months, patient was sent home to England, where he arrived on March 12th, 1916. He was admitted into hospital and treated by scraping and escharotics. Again this treatment had no effect, the condition getting worse and spreading down between scrotum and thigh, and then on to the former. At this time he was sent to the London School of Tropical Medicine for treatment, the condition being recognised as a tropical one. He was admitted on the 14th of August, 1916.

Examination.—The patient looked healthy, conjunctiva a good colour, tongue clean, teeth healthy. Heart and lungs normal, no signs of tubercle. Liver enlarged 2 inches below costal margin. Spleen $2\frac{1}{2}$ inches below cm.

Urine.—No albumin, blood or sugar.

Fæces.—Nil, no protozoa, no ova.

Groin.—The whole of the right groin was implicated in an ulcerative process running from the anterior superior spine to the side of the scrotum, the depth of the ulceration being comparatively superficial, with a fibrosed and thickened base. There were, however, signs of attempted healing at the sides and also in parts of the interior. The condition had been much interfered with by the scraping, but even so, it had all the usual characteristics of an ulcerating granuloma, and was diagnosed as such. It did not look like a syphilitic condition, and WASSERMANN'S

reaction was negative on three different occasions. There were no signs of the original sore on the penis, nor were there any ulcerative lesions present on that organ.

It is not altogether clear what this sore was. Possibly it had no connection with the ulcerative lesions which subsequently developed, or what is probable is that it and the ulcerative granuloma infection were acquired at the same exposure, the latter breaking out on the groin after the wound in the bubo had been made. It is common, of course, for ulceration to appear on the groins or pubis with no signs on the penis.

Intravenous injections of antimony tartaratum were begun at once, and the results obtained by these and other forms of treatment are shewn in the following table:—

TABLE OF TREATMENT.

DATE.	DRUG AND DOSE EMPLOYED.	REMARKS.
1916.		
Aug. 14	Antimonium Tartaratum intravenously, gr. 1	Treatment begun to-day.
.. 17	Ditto gr. 1	Place looks better already.
.. 21	Ditto gr. 1	Spreading at one place. Otherwise better, if anything.
.. 24	Ditto gr. 1	Looks a little better. Scrapings taken from it to-day and examined.
.. 28	Ditto gr. 2	Distinctly better, edges less swollen, contracting, floor clean and healthy looking. New places seem arrested. Keeping it dry with dusting powder.
,, 31	Ditto gr. 2	
Sept. 4	Ditto gr. 2	Improvement maintained. Again a little better. Epithelium spreading in now.
.. 7	Ditto gr. 2	Improvement continuing.
.. 11	Ditto gr. 2	
.. 14	Ditto gr. 2	
,, 18	Ditto gr. 2	
,, 21	Ditto gr. 2	
.. 25	Ditto gr. 2	
.. 28	Ditto gr. 2½	
Oct. 2	Ditto gr. 2	Great improvement, some parts completely healed.
.. 5	Ditto gr. 2½	
.. 9	Ditto gr. 2	Improvement continuing, but slow.
.. 12	Ditto gr. 2	
,, 16	Ditto gr. 2½	
,, 19	Ditto gr. 2	Steadily improving.
.. 23	Ditto gr. 2	Further improvement.
.. 26	Ditto gr. 2	
Nov. 2	Ditto gr. 2	
.. 6	Ditto gr. 2	Tendency to break out again. New place over pubis and on scrotum.
.. 13	Ditto gr. 2	Not looking well. Frequency of the injections increased, viz., three times a week, Monday, Wednesday and Friday, two grains a time.
.. 15	Ditto gr. 2	

TABLE OF TREATMENT—*continued.*

DATE.	DRUG AND DOSE EMPLOYED.	REMARKS.
Nov. 17	Antimonium Tartaratum intravenously, gr. 2	
,, 20	Ditto ... ... gr. 2	
,, 22	Ditto ... ... gr. 2	
,, 24	Ditto ... ... gr. 2	
,, 27	Ditto ... gr. 2	
,, 29	Ditto . . gr. 2	
Dec. 1	Ditto ... ... gr. 2	No better: worse, if anything.
,, 4	Ditto . gr. 2	
,, 6	Ditto ... ... gr. 2	Place over pubis increasing in size.
,, 7	First X-Ray exposure ...	
,, 8	Antimonium Tartaratum intravenously, gr. 2	About the same.
,, 11	Ditto . . ... gr. 2	
,, 13	Ditto .. . gr. 2	
,, 15	Ditto ... ... gr. 2	
,, 18	Ditto ... ... gr. 2	Condition much better again, but by no means cured.
,, 19		Antimony injections stopped, and wound now treated as an ordinary septic one.
,, 28	Second X-Ray exposure	Condition a little better again. Improving slowly.
1917. Jan. 22		Condition worse; breaking down again. Fresh antimony treatment started.
,, 23	Antimonium Tartaratum intravenously, gr. 2½	
,, 26	Ditto ... ... gr. 2½	
,, 30	Ditto ... ... gr. 3	Looking very bad; spreading.
Feb. 2	Ditto . gr. 3	
,, 6	Ditto . .. gr. 3	
,, 9	Ditto . ... gr. 3	No better; worse, if anything.
,, 12	Third X-Ray exposure...	
,, 13	Antimonium Tartaratum intravenously, gr. 3	
,, 16	Ditto . ... gr. 3	Getting worse.
,, 20	Ditto . . . gr. 3	
,, 23	Ditto ... ... gr. 2	Pains in back, antimony therefore reduced in dose. Antimony stopped after 23rd.
,, 26	Fourth X-Ray exposure	
,, 27	Galyl ·4 gram., Pot. iod. gr. x. t.i.d. ...	Ulcers looking a little better.
Mar. 7	Galyl ·4 gram., Pot. iod. gr. xv. t.i.d. ...	Perhaps a little better, ulcers a little shallower.
,, 12		No better, worse again, anti-specific treatment no effect.
,, 14		Left hospital to-day.

It will thus be seen that the patient had three courses of antimony, viz.: 25 injections August 14th to November 13th, 1916, 56½ grains; 15 injections November 15th to December 18th, 1916, 30 grains; and 10 injections January 23rd to February 23rd, 1917, 28 grains; or a total of 114½ grains in all.

Distinct and marked improvement followed the first injections, but then the condition seemed to become resistant, and instead of healing occurring, further extensions took place, and when the patient left hospital he was as bad, or worse even, than when he entered.

He was strongly urged to remain, but his relatives insisted on removing him, and did so against all advice to the contrary.

A perusal of the table also shews that the patient had four X-ray exposures. The first of these seemed to produce some results, the latter none. In addition, mixed vaccines, made from the organisms growing in the ulcers were administered, and many different varieties of local treatment were also tried. Antimony oxide powder, zinc oxide powder, and calomel, were dusted on, fomentations were employed, the wounds were treated with liq. sodæ chlorinatæ, the edges were scraped, but nothing had the slightest effect. Finally, as a last resort, anti-syphilitic remedies were given a chance, likewise with disappointing results.

As regards diagnosis, the possibility of the condition being something else than ulcerative granuloma was always borne in mind, but clinically it was perfectly typical of this condition, and it was so diagnosed by other members of the staff who were well acquainted with this disease. The depth of the ulcers, their appearance, the fibrosed base, the tendency to heal at places while extending at others, the history of onset, etc., all combined to support this view.

Lupus, rodent ulcer, and malignant disease were debated, but dismissed, as were also blastomycosis and other ulcerative conditions.

Many different organisms were present in the lesions, bodies similar to those described by Donovan, Carter, Cleland and Wise being easily found.

The impression these gave one was that they were bacterial in nature and certainly not protozoal. They were evidently the same as the *Calymmatobacterium granulomatis* of Aragao and Vianna (1912).

Whether or not these are the real agents of the complaint remains to be proved: their presence, however, was interesting, as they confirmed the opinion that the condition was one of ulcerative granuloma, and not some other disease.

CORRESPONDENCE.

C/o Medical Department, Fiji,

12th March, 1917.

Dear Dr. Low,

In reference to your letter dated December 8th last [a letter referring to Dr. Harper's paper on "Five Hundred and Forty-two Cases of Yaws treated by Kharsivan and Arsenobillon," published in the Transactions of February, 1917, Vol. X., No. 4., and asking him if he could be certain of the exclusion of syphilis in his paraframbæsial cases] and my reply dated February 10th, I beg to forward a communication, very kindly written at my request by Dr. Lynch, together with a short note by myself, which, we venture to hope, you will find of interest.

With many thanks for your stimulating interest in the matter,

I remain, yours very sincerely,

PHILIP HARPER.

YAWS AS A DISTINCT DISEASE IN FIJI.

Practically every Fijian suffers from typical primary and secondary yaws. The disease begins almost always after the sixth month and usually between the second and sixth years. Up till the sixth month the Fijian infant is, as a rule, a veritable prize baby. Infection before the sixth month, or rather before the eruption of teeth, is certainly accidental, but after that time it may be purposive, though it is, I think, usually accidental.

In addition to this disease, practically all Fijians suffer from a train of symptoms, or from isolated symptoms, closely resembling various of the manifestations of tertiary syphilis.

Moreover, aneurism, general paralysis of the insane, and locomotor ataxy are of frequent occurrence among the Fijians, one case perhaps occurring for every thousand of the total population.

The above facts cannot be doubted by any medical man who, as a matter of routine, thoroughly examines his Fijian patients.

As, however, the tertiary and the more remote sequelæ of yaws are not admitted in many quarters outside Fiji, it is as well to examine the only other feasible explanation of the prevalence of tertiary and quaternary lesions, namely, the possibility of the presence of syphilis.

The supposition that syphilis is the cause of these manifestations must necessarily fall to the ground unless we suppose syphilis to be extremely common amongst the Fijians, almost as common, or quite as common, as the writer considers yaws. In fact, the most likely hypothesis for one wishing to prove the syphilitic origin of these tertiary and quaternary diseases amongst the Fijians would be that the disease which the writer considers yaws is really syphilis.

What, then, are the arguments against the general prevalence of syphilis amongst the Fijians at the present time?

1. The absence of manifestations of hereditary syphilis, such as rashes, snuffles, deformities, marasmus, etc., amongst Fijian infants. The writer has attended at least two hundred Fijian confinements, and has never seen any sign of hereditary syphilis in any Fijian infant, either newborn or older.

2. The absence of "Hutchinson's teeth" in Fijian children and adults. The writer has examined many thousands of Fijian mouths and has never seen this manifestation. Periostitis, keratitis, depressed bridge and other signs, which in other races are looked upon as syphilitic in origin, occur in the Fijians only after an attack of primary or secondary yaws.

3. Although the writer has thoroughly examined many thousands of Fijians, both male and female, including the generative organs, he has never seen a case of Hunterian chancre in a Fijian, whether genital or extra-genital, nor has the scar of a previous chancre been seen.

4. Many Europeans live with, or occasionally cohabit with, Fijian women. No such European has been found infected with syphilis. On the other hand, cases of Europeans being infected from Indians are common in Fiji. As long as a European keeps to a Fijian woman he is considered to be quite safe as regards venereal disease.

5. Though in many of the manifestations of yaws, such as periostitis, gummatous ulceration, etc., a single case may be quite easily mistaken for syphilis, yet, when one deals with thousands of cases, it is seen that the march of symptoms and the relative frequency of certain symptoms, such as what we call crab-yaws or the condition of superficial dry dermatitis, are quite different to what obtains in syphilis, as seen amongst the Europeans and Indians in Fiji.

6. The therapeutics of Fijian disease differs, except in the quaternary stages, from the therapeutics of syphilis, the main difference being that the Fijian disease is not nearly so amenable, if it is at all amenable, to mercury. Furthermore, the power of the higher arsenical compounds (such as salvarsan, neo-salvarsan, and, to a less degree, atoxyl and soamin) is far greater in all stages of yaws than it is in syphilis.

PHILIP HARPER, M.R.C.S. Eng.

(Late Sen. Obst. H.P., St. Thomas's Hospital, London),

D.M.O., Ra, Fiji.

YAWS AND SYPHILIS.

In reference to the question of yaws and syphilis and their similarity or identity, it may be considered as practically proved in Fiji that the two diseases are separate, and the reasons given by Dr. Harper, in his paper above, are, to my mind, sufficient proof that the two diseases are separate. Of course, we recognise that both diseases are the results of infection by a spirochæte, but we equally recognise that it is a different organism of the same family that causes each disease, and therefore syphilis and yaws are to be regarded as running parallel to each other, and as both producing symptoms, which, in their secondary and tertiary manifestations, are strangely alike.

It is said, with a good deal of evidence in favour of the assertion, that no Fijian has ever suffered from a Hunterian chancre. I have had one single instance of such a case reported by one of the Medical Officers of the Government Service some years ago. I have also seen a case of congenital syphilis in the child of a Fijian mother by a European father who had syphilis; the mother shewed no signs of disease at all. I have

never seen a Fijian with syphilis in the course of a good many years' experience of Fijian work, both in and out of hospitals in Fiji. I would draw attention to a paper published in the *Annals of Tropical Medicine and Parasitology*, in June, 1915, in which are depicted, under the name gangosa, a series of pictures of what we in Fiji look upon as undoubtedly cases of tertiary yaws. Arguments are advanced in favour of this sequela of tertiary yaws being a separate disease. Up to the present time Medical Officers in Fiji, who see very large numbers of typical cases of the conditions described as gangosa, have no hesitation in considering the condition as an undoubted manifestation of yaws in a late stage. All Fiji cases have suffered from yaws, which is a higher proportion than that quoted by STITT of Kerr, who says that, of 315 cases, 205 shewed yaws scars.

It is an undoubted fact that yaws in Fiji does not respond to mercurial treatment as it is said to respond in some other countries; so much so that Medical Officers in the colony had long since discarded mercurial treatment in favour of iodide of potassium alone, until the comparatively recent introduction of salvarsan and other arsenical intensives, which are so much more rapid in their action; and I think that most Medical Officers who have gained their experience in Fiji will agree with the conclusions in Dr. HARPER'S paper that yaws, as seen in Fiji, is a distinct disease, and is entirely a separate disease from syphilis.

G. W. A. LYNCH, M.B.,

Chief Medical Officer, Fiji.

EXCHANGES.

Anales de la Academia de Ciencias Medicas Fisicas y Naturales de la Habana.
Annali di Medicina Navale e Coloniale.
Annals of Tropical Medicine and Parasitology.
Archives de l'Institut Pasteur Tunis.
Arquivos do Instituto Bacteriologico Camara Pestana.
Bulletin Public Health and Marine Hospital Service of the U.S.
Bulletin of the Tropical Diseases Bureau.
Bulletin de la Société de Pathologie Exotique.
Bulletin de la Société Portuguaise des Sciences Naturelles.
Bulletin de l'Academie Royale de Médecine de Belgique.
het Geneeskundig tydschrift voor Nederlandsch-Indie.
Indian Journal of Medical Research.
Indian Medical Gazette.
Johns Hopkins Hospital Bulletin.
Journal of the Royal Naval Medical Service.
Journal of the Royal Army Medical Corps.
Journal of Tropical Medicine and Hygiene.
Journal of Tropical Veterinary Science.
L'Enseignement Medico Mutuel Internationale.
Memorias do Instituto Oswaldo Cruz.
New Orleans Medical and Surgical Journal.
Philippine Journal of Science.
Revue de Médecine et d'Hygiene Tropicales.
Sanidad y Beneficencia.
Veterinary News.

NOTE.—The above publications lie in the Society's room at 11, Chandos Street, W., and are at the disposal of Fellows.

J. C. PHELP AND SON, PRINTERS, WALTHAMSTOW.

PUBLISHING NOTICES.

NOTICE TO FELLOWS.

A copy of the TRANSACTIONS will be posted regularly to every Fellow whose subscription is not in arrears during the Session.

Fellows are requested to give early intimation of any change of address, and in case of non-delivery of their copies of the TRANSACTIONS to communicate with the Secretaries as soon as possible. When copies of the TRANSACTIONS are returned by the Post Office, marked "gone away" or "insufficiently directed," no more copies will be posted to that address until further instructions have been received.

SPECIAL NOTE.—Complaints are constantly being received about the TRANSACTIONS not reaching Fellows abroad. In almost every instance, when the matter has been carefully looked into, it has been found that the Fellow has changed his original address and has not notified this change to the Secretaries at home.

Unless this is done, it is impossible for the TRANSACTIONS to be regularly received, and the Secretaries hope that Fellows will be more careful about this in future.

All communications should be addressed to—

THE SECRETARIES,
SOCIETY OF TROPICAL MEDICINE AND HYGIENE,
11, CHANDOS STREET, CAVENDISH SQUARE, W.

SALE OF COPIES TO NON-FELLOWS.

Copies of the TRANSACTIONS may be obtained by Non-Fellows from H. K. LEWIS & Co. Ltd., 136, Gower Street, W., price 8s. 6d. net each issue, or 28s. per annum, postage extra.

Fellows of the Society are reminded that they can only obtain their copies through the Secretaries, as stated above, and not from Messrs. LEWIS.